AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions of claims in the application.

Listing of Claims

1-61 (Cancelled)

62. (New) A method for identifying a therapeutic compound for treating undesirable cell activation, said method comprising:

(i) providing test cells that express a target protein containing a DEF domain and a MAP kinase,

(ii) culturing said cells in the presence of a growth factor, cytokine, tumor promoter, or oncogene,

(iii) contacting said cells with a candidate compound, and

(iv) assessing the binding of said MAP kinase to said DEF domain relative to the binding in the absence of said candidate compound, wherein a candidate compound that inhibits said binding is identified as a therapeutic compound for treating undesirable cell activation.

63. (New) The method of claim 62, wherein said DEF domain comprises the amino acid sequence F-X-F-P (SEQ ID NO: 1).

64. (New) The method of claim 62, wherein said test cells are selected from the group consisting of fibroblasts, a primary cell line, an immortalized cell line, and a tumor-derived cell line.

65. (New) The method of claim 62, wherein said growth factor, cytokine, tumor promoter, or oncogene is selected from the group consisting of epidermal growth factor (EGF), transforming growth factor α, heparin-binding-like EGF, heregulin, amphiregulin, epiregulin, cripto, PDGF-AA, PDGF-BB or PDGF-CC, insulin, insulin-like growth factors, fibroblast growth factors, colony stimulating factor, heaptocyte growth factor, a chemokine, an interleukin,

lysophosphatidic acid, a phorbol ester, okadaic acid, microcystin, vanadate, hydrogen peroxide, calyculin A, Erb2/neu, sis, kit, Ras, Raf, PI3-kinase, and PTEN.

66. (New) The method of claim 62, wherein said MAP kinase is extracellular signal-regulated kinase 1/2 (ERK1/2).

67. (New) The method of claim 62, wherein said binding is assessed by detecting a DEF domain-dependent phosphorylation.

68. (New) The method of claim 62, wherein said target protein is a Fos, Myc, or Jun family protein.

69. (New) The method of claim 68, wherein said target protein is c-Fos.

70. (New) The method of claim 69, wherein said step (iv) comprises assessing the phosphorylation of T325 or T331.

71. (New) The method of claim 62, wherein said therapeutic compound is useful for the treatment of cancer, a cardiovascular disorder, an inflammatory disorder, a metabolic disorder, a neuropathy or a behavioral disorder, or a sleep disorder.

72. (New) A method for identifying a therapeutic compound for treating undesirable cell activation, said method comprising:

(i) providing a sample comprising a target protein comprising a DEF domain, a MAP kinase, and a candidate compound, and

(ii) assessing the binding of said MAP kinase to the DEF domain of said target protein in the presence of said candidate compound relative to binding in the absence of said candidate compound, wherein a compound that inhibits binding of said MAP kinase to the DEF domain of said target protein is identified as a therapeutic compound.

73. (New) The method of claim 72, wherein said DEF domain comprises the amino acid sequence F-X-F-P (SEQ ID NO: 1).

74. (New) The method of claim 72, wherein said MAP kinase is extracellular signal-regulated kinase 1/2 (ERK1/2).

75. (New) The method of claim 72, wherein said binding is assessed by detecting a DEF domain-dependent phosphorylation.

76. (New) The method of claim 72, wherein said target protein is a Fos, Myc, or Jun family protein.

77. (New) The method of claim 76, wherein said target protein is c-Fos.

78. (New) The method of claim 77, wherein said target protein is c-Fos and step (ii) comprises assessing the phosphorylation of T325 or T331.

79. (New) The method of claim 72, wherein said therapeutic compound is useful for the treatment of cancer, a cardiovascular disorder, an inflammatory disorder, a metabolic disorder, a neuropathy or a behavioral disorder, or a sleep disorder.

80. (New) A method for treating a cancer, a cardiovascular disorder, an inflammatory disorder, a metabolic disorder, a neuropathy or a behavioral disorder, or a sleep disorder in a mammal, said method comprising administering a therapeutically effective amount of a compound that inhibits the binding of a MAP kinase to the DEF domain of a target protein.

81. (New) An antibody that specifically binds to phospho-T-325 of c-Fos.